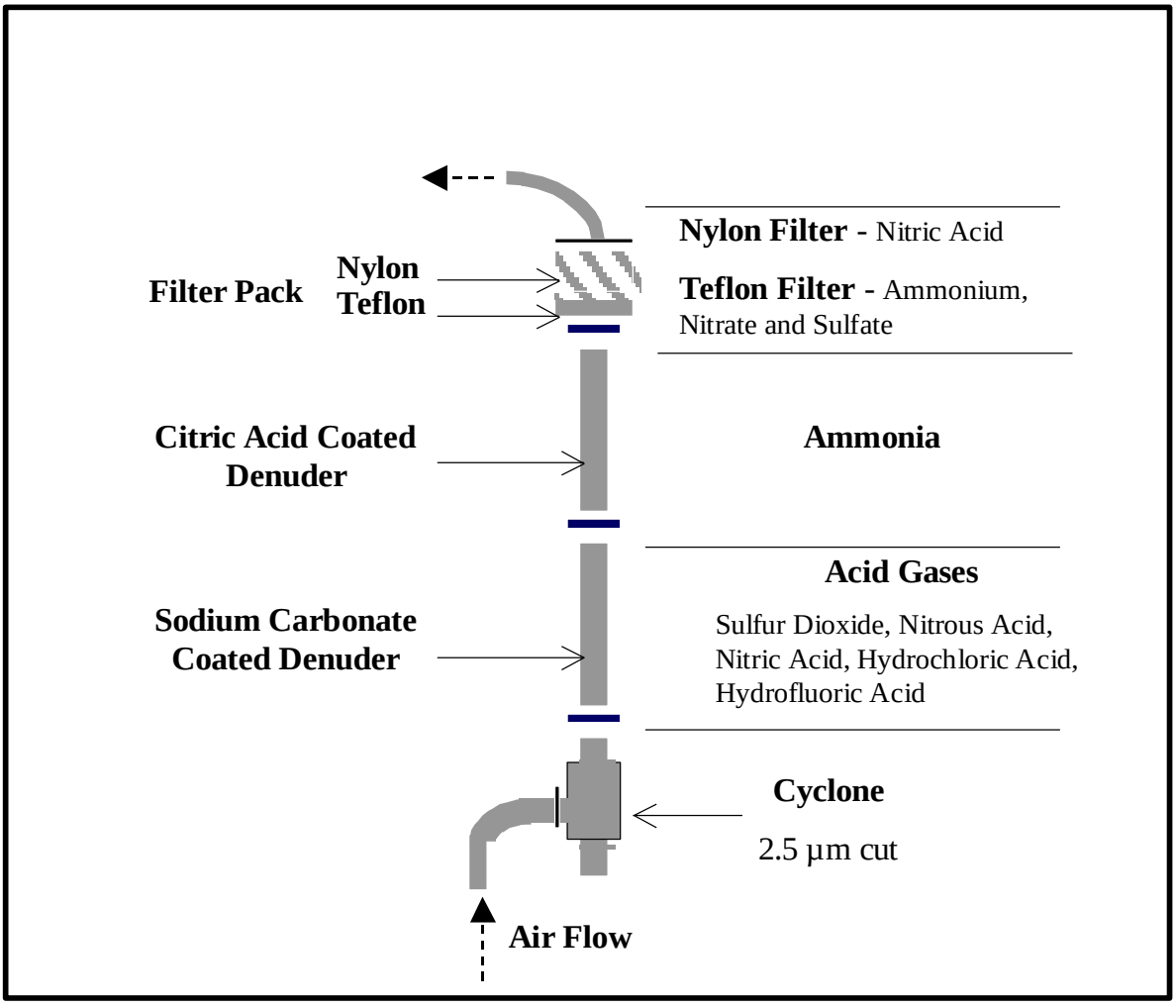
The schematic of a typical ADS field assembly is given in Figure 4.2. Air is drawn through the ADS by a pump. The airflow initially enters a Teflon^{TM} coated cyclone that effectively removes coarse particles of >2.5 micrometers in aerodynamic diameter. The airflow then leaves the cyclone and enters the first of the two denuders that are connected in series. From this point, the air stream passes only through coated glass annular space until it reaches the filter pack. The first denuder is coated with sodium carbonate, Na_2CO_3 (A 50% [v/v] solution of methanol in de-ionized water containing 1% [w/v] glycerol and 1% [w/v] Na_2CO_3) to collect acidic gases and the second with citric acid, $C_6H_8O_7$ (A 50% [v/v] solution of methanol in de-ionized water containing1% [w/v] $C_6H_8O_7$) to collect basic gases.

Figure 4.2 Typical ADS Field Assembly



Since the airflow through the annular denuders must be laminar in order to ensure that the gases separate from the fine particles, the concentric tubes are inset approximately 25 mm from the flow entry end of the annular denuder (see Figure 4.1**)** to allow the air stream to become laminar